ValkyrieManager

Ethernet Traffic Generation & Analysis Software

VALKYRIE

MANAGER

Xena ValkyrieManager is a free Windows-based application used for managing Xena's stateless Ethernet traffic generation & analysis solutions. The user-friendly interface makes it an effective tool for performing a wide range of core test scenarios for network equipment manufacturers (NEMs), network service providers, research organizations, enterprise, government and conformance testers.

Core functions

ValkyrieManager is used to configure and generate streams of Ethernet traffic between Xena test equipment and devices under test (DUTs) at all speeds up 800Gbps, and analyze the results.

The port and stream configuration grids let test engineers quickly view and work with a numerous ports and streams simultaneously. The traffic streams can be shaped to match very specific real-world scenarios using a wide range of variables. The packet editor function supports both protocol (IP, VLAN, UDP, etc.) and byte-level packet definitions, and the packet capture function can also automatically decode the packet content at the protocol level.

ValkyrieManager also makes it easy to quickly view and analyze traffic statistics, payload errors, latency and jitter. set up specific filters for incoming traffic, and perform real-time capture of packets.

ValkyrieManager offers many ways to streamline testing. These range from being able to copy and paste stream definitions across ports quickly customizing the GUI to match the test engineers' needs by e.g. letting them hide irrelevant controls etc so they can better focus on the task they are currently performing.

Once test-beds and test cases have been configured, they can be saved and shared with other users. ValkyrieManager can be used by multiple users in different locations to manage multiple Xena chassis simultaneously.

TOP FEATURES

- Stateless Layer 2-3 traffic generation and analysis
- Used for functional and performance testing of 1/2.5/5/10/25/40/50/100/200/400/800 GigE
- Easy management of ports and traffic streams shaped to match any real-world scenario
- Packet editor with support for both protocol and byte-level packet definitions
- Automatic protocol decoding of incoming packets
- Supports multiple Xena chassis shared by multiple users in different locations down to the port level via TCP/IP
- Supplied free with every Xena chassis, together with 3 years' free SW upgrades
- Comes bundled with a growing range of value-add test apps including ValkyrieCLI, Valkyrie2544, Valkyrie1564, Valkyrie2889, and Valkyrie3918.

Below: This screen shows the stream properties layout and packet header editor.
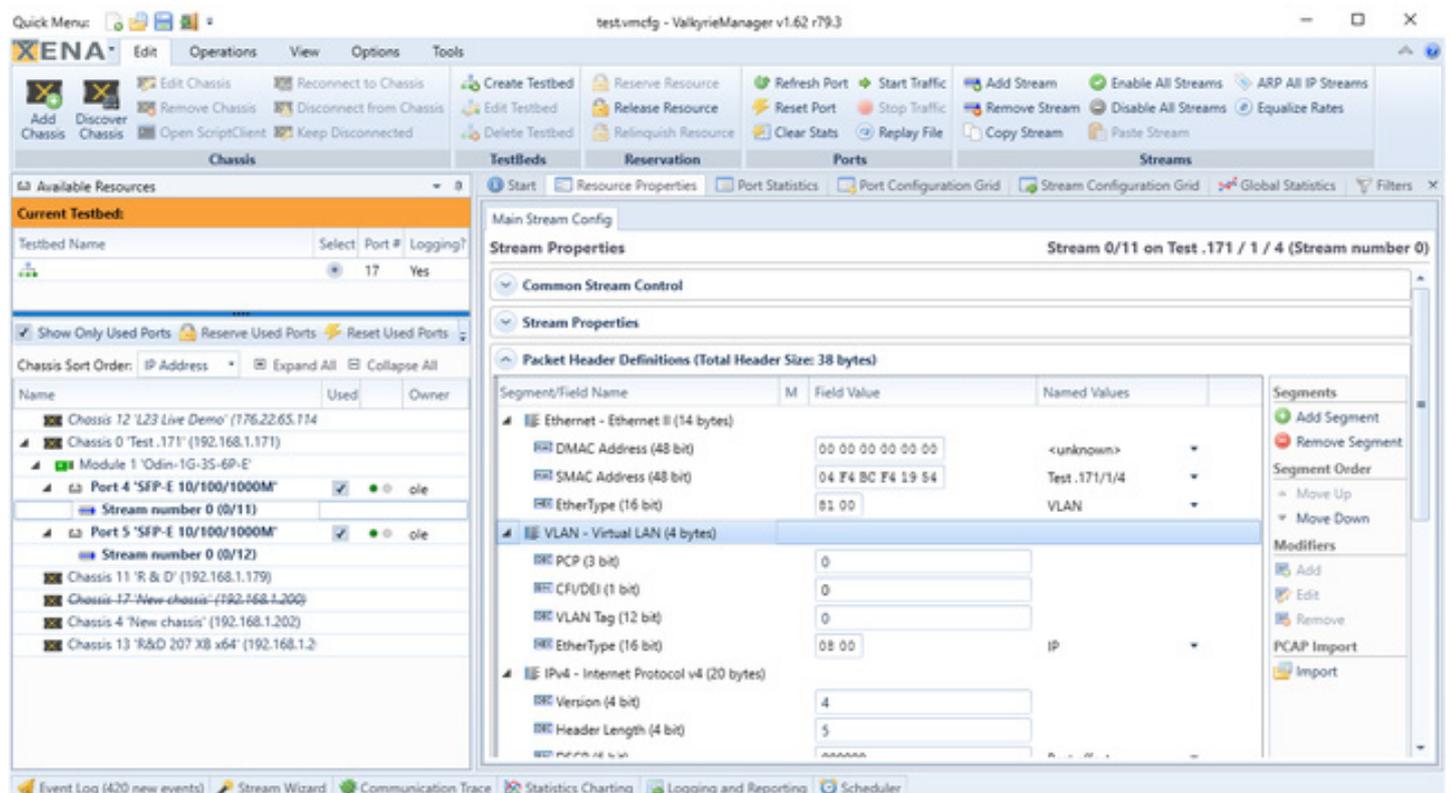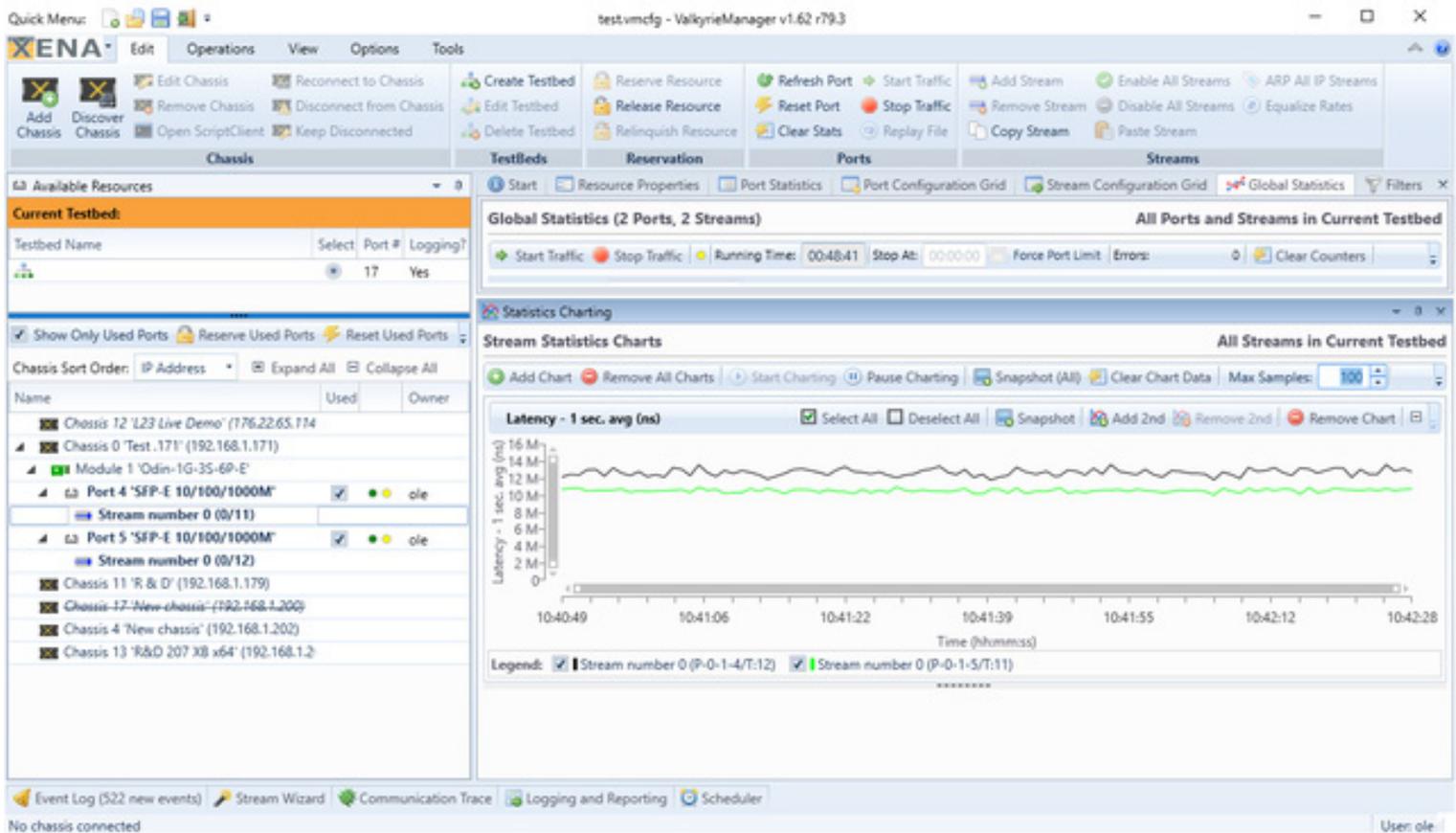
Above: This screen shows a stream statistics chart where the latencies of two streams are displayed in realtime.

GUI has many user-friendly features

ValkyrieManager optimizes testing work flow:

- Docking function lets you quickly customize your work area
- You can create, define and change testbeds very quickly
- A condensed grid view makes it easy to configure ports and streams
- Streams are part of the resource treeview under each port
- Option for copying and pasting stream definitions across ports
- Option for previewing packets which will be transmitted by a stream
- Select and activate multiple resources e.g. reserve/release, start/stop traffic, etc.
- Graphically plot various stream statistics values in realtime

Wide range of applications

- Evaluate the stability of switches, routers and edge devices under static or dynamic load conditions for minutes, hours and days
- Identify and troubleshoot functional behavior (including negative testing) of new network functionality in the development lab or before deployment into the operational network
- Evaluate key performance parameters such as per-flow QoS, fail-over time or Access Control Lists (ACL); filtering performance
- Perform comparative analysis of devices or services with deterministic traffic during product development cycles or vendor comparisons
- Basic automation with ValkyrieManager Scheduler

Bundled Software

More advanced test scenarios can be conducted using the other free applications that come bundled with ValkyrieManager.

These include Valkyrie2544, Valkyrie3918, Valkyrie2889 and Valkyrie1564 for performing RFC2544, RFC3918, RFC2889 and Y.1564 testing.

There is also a ChassisUpgrader which makes it easy to upgrade software and firmware on Xena test chassis without a direct physical connection.

Test Automation with Valkyrie

Valkyrie Command Line Interface:
Valkyrie test solutions come with a powerful and easy-to-use Command Line Interface (CLI) API that makes test automation easier for test engineers. Script examples of Perl and Python are available on our website.

Valkyrie REST API:
We also offer a REST API that can be used instead of the CLI. In addition a full Python object-oriented REST client is available, enabling Python developers to simply pip install it and start building automation scripts without spending time on developing the traffic generator layer.

ValkyrieManager Scheduler:
ValkyrieManager supports scheduling – a sequence of operations activated with a single mouse click – to make testing easier. The ValkyrieManager Scheduler can be used to start-and-stop traffic, change packet rate, change operations orders, add loop section, etc.
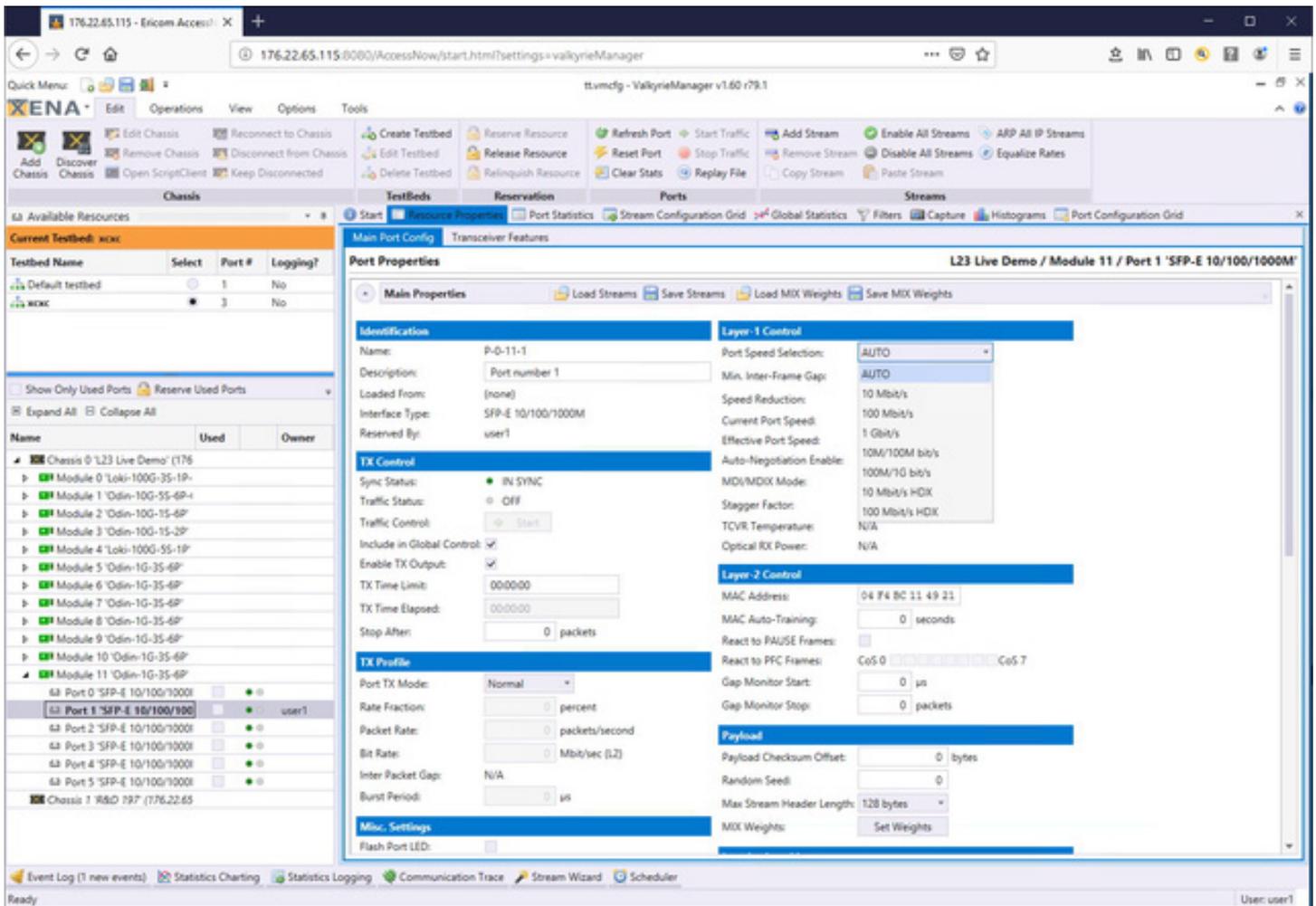
BASIC WORK FLOW

1. Launch ValkyrieManager
2. Connect to one or more Xena chassis via IP address.
3. Reserve the ports on the test modules you want to use.
4. Configure the ports (e.g. minimum IFG, MAC Address, Mac training, enable flow control, gap monitoring, payload checksum, max. stream header, loopback mode, latency offset, configure IPv4 address for ARP and PING requests)
5. Add and configure the traffic streams. This can include a unique stream ID for identifying latency, jitter and packet loss; when to start, stop and register the stream; the burst rate, error injection, frame checksums, types of packet length, and the payload type.
6. Define flows of traffic based on e.g. source and destination MAC and VLANs (ValkyrieManager can support **over 4 billion** flows).

7. Define filters to get statistics on specific types of packets, content or packet sizes, or to trigger the capture mechanism or focus Histogram results.
8. Create triggers for when the capture function should start/stop and what should be captured e.g. FCS or payload error frames etc. You can also save the capture buffer as a PCAP file for analysis in e.g. Wireshark.
9. Once the traffic is started view the results in the capture graph or use histograms to plot distributions of values over time.
10. View detailed summaries of all this data via the Global Statistics or analyze port, packet and service issues in the Event Log lists.

Documentation and Support

Detailed documentation of all functionalities is available online and Xena offers web-based training for customers as part of our free technical support service.

Test. Improve. Repeat.

Miniumum System Requirements:
- ValkyrieManager (approx. 40MB) can be installed on PCs running MS Windows 8 or newer (no licenses req'd)

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